

20291**Prediction of late complications of acute myocardial infarction in diabetic patients**Assistant Professor Koteliukh M¹

Kharkiv National Medical University, Kharkiv, Ukraine

Funding Acknowledgements: Type of funding sources: Public Institution(s). Main funding source(s): Kharkiv national medical university**Background:** The combination of acute myocardial infarction (AMI) and type 2 diabetes mellitus (DM) is common in patients, and the prognosis is usually worse than in patients without type 2 DM. Late complications of AMI in the presence of type 2 DM have a negative impact on the viability of patients.**Purpose:** To predict the development of late complications in patients with AMI and concomitant type 2 DM.**Methods:** A total of 109 ST elevation myocardial infarction (STEMI) and 2 type DM patients were included. The patients were treated from 01 September 2018 till 31 December 2020. The study involved clinical assessment of the patient's condition, C1q tumor necrosis factor - related protein 3 (CTRP3) and adropin quantification. Late complications of AMI were included atrial fibrillation, atrioventricular blockage, chronic heart failure 2-3 functional classes, aneurysm of the apex and ventricular, ejection fraction $\leq 49\%$. We measured serum-concentrations of CTRP 3 and adropin by enzyme immunoassay. Reference values of CTRP 3 were 315.85 (287.06 – 371.02) ng/ml and adropin – 23.58 (20.86 – 26.29) pg/ml. Qualitative data were presented as percentages; quantitative as median and interquartile range (25 and 75 percentiles). The nonparametric Mann-Whitney rank criterion was used to compare quantitative indicators. Binary logistic regression was used to build a model for predicting late complications in patients with AMI with type 2 DM.**Results:** In total, 75 men (68.8%) and 34 women (31.2%) were included in the study. CTRP 3 levels on day 14 in patients with AMI and type 2 DM was determined 262.01 (225.32 – 288.84) ng/ml and adropin concentration on day 14 - 19.97 (16.35 – 20.99) pg/ml according to CTRP 3 reference values ($p < 0.05$). No late complications were identified in 9 patients and 65 patients had late complications. The most important indicators for constructing the model were: CTRP3 quality, adropin quality, total cholesterol (TC), triglycerides on day 14 (TG), ejection fraction (EF) on day 14, low density lipoproteides (LDL) on day 14, the size of the left atrium on day 14 (LA). Binary logistic regression was used to obtain a mathematical model in order to determine the probability of developing late complications (P) of AMI: $P = [1 + \exp(-4.046 \times \text{Adropin} - 2.714 \times \text{CTRP3} + 6.270 \times \text{TC} - 2.988 \times \text{TG} - 0.288 \times \text{EF} - 7.407 \times \text{LDL} - 1.398 \times \text{LA} + 19.259)]^{-1}$. The accuracy of the model was 94.6%.**Conclusion:** This study showed that the use of a model to detect late complications of AMI may in the long term predict the development of uncomfortable cardiovascular events of AMI, accompanied by type 2 DM. Of course, the sample size was relatively small, which should be increased in the future to confirm the findings.